

REMARKS

Applicants respectfully request entry of the amendments and remarks submitted herein. Claims 1 and 27 have been amended, claim 17 has been canceled, and new claims 29-32 have been added. Claims 1-16, 18-27, and 29-32 are currently pending. Reconsideration of the pending application is respectfully requested.

Support for New Claims

Support for new claims 29-32 can be found, for example, in the originally filed claims and throughout the specification. Specifically, new claims 29 and 30 are dependent claims, and are directed toward the melting temperature of complementary IDS1-n and IDP1-n. New claims 31 and 32 are independent claims that essentially correspond to claims 1 and 27, respectively. New claims 31 and 32 include the melting temperature limitations of claims 29 and 30 instead of the solid support limitation recited in claims 1 and 27.

The melting temperature limitations were present in the original claims from the PCT application. The melting temperature limitations also are disclosed in the specification. See, for example, page 3, lines 6-14; the paragraph bridging pages 8 and 9; and page 9, lines 9-22. New claims 29-32 do not introduce new matter.

The 35 U.S.C. §112 Rejections

Claim 1 and 27 stand rejected under 35 U.S.C. §112, second paragraph, as the Examiner asserted that those claims are indefinite for failing to particularly point out and distinctly claim the subject matter that Applicant regards as the invention. The Examiner asserted that claims 1 and 27 are directed toward methods for labeling and identifying a solid, liquid, and gaseous substance, but that the last step recites detecting whether or not hybridization occurs. The Examiner indicated that it is unclear as to whether positive hybridization would be associated with identification of the substance or if no hybridization would be associated with identification of the substance. This rejection is respectfully traversed.

Applicants have amended claims 1 and 27 to recite that “wherein when hybridization occurs between the IDS1-n of all of said selected nucleic acid molecule(s) (N1-n) and said IDP1-n of said second group of nucleic acid molecules (N’1-n), the substance (S1-n) is identified, wherein when hybridization does not occurs between the IDS1-n of all of said selected nucleic acid molecule(s) (N1-n) and said IDP1-n of said second group of nucleic acid molecules (N’1-n), the substance (S1-n) is not identified.” In view of the amendments and remarks herein, Applicants respectfully request that the rejection of claims 1 and 27 under 35 U.S.C. §112, second paragraph, be withdrawn.

The 35 U.S.C. §102 Rejections

Claims 1-4, 6, 8-9, 12-13, 20, 24, 26 and 27 stand rejected under 35 U.S.C. §102(b) as being anticipated by Sano et al. (U.S. Patent No. 5,665,539). Claims 1-11, 13-15, 20, 24, 26, and 27 stand rejected under 35 U.S.C. §102(b) as being anticipated by Slater et al (WO 94/04918). Claims 1, 7-10, 13, 15, 17, 18, 20-23, and 27 stand rejected under 35 U.S.C. §102(b) as being anticipated by Cantor et al (U.S. Patent No. 5,795,714). Claims 1, 2, 6, 16, 18, 24, and 25 stand rejected under 35 U.S.C. §102(b) as being anticipated by Bumstead et al. (1997, *J. Virological Methods*, 65:75-81). These rejections are respectfully traversed.

Applicants have amended claims 1 and 27 to incorporate the limitation of claim 17. Claims 1 and 27 as amended recite “wherein each of the second group of nucleic acid molecules (N’1-n) is bound to a predefined site on a solid surface...” Support for this amendment can be found, for example, in original claim 17 and on page 5, lines 26-31, page 10, lines 24-31, page 11, lines 26-29, and Figure 6 of the specification. As claim 17 was rejected over only Cantor et al., Cantor et al. is the only reference discussed herein.

Cantor et al. teaches a method for replicating an array of nucleic acid probes by immobilizing nucleic acids on a solid support. The nucleic acid sequences of Cantor et al. have a constant sequence and a random sequence. The nucleic acids are contacted with a primer that hybridizes to the constant sequence, and the primer is then enzymatically extended using the random sequence as a template. The extension product is denatured from the nucleic acid and fixed on a second solid support for detection.

Cantor et al. do not teach or suggest a method for labeling and identifying a substance using the methods steps and nucleic acids having each of the different elements recited in the pending claims. According to the present invention, nucleic acids having a random sequence would not be used in the claimed methods. Random sequence nucleic acids would not allow for the identification of a substance (S1-n) as the pending claims recite. The claims indicate that nucleic acid sequences are "predefined." "Predefined" can be interpreted to mean "nonrandom."

In addition, the different elements of the nucleic acids are not taught or suggested by Cantor et al. For example, Cantor et al. does not teach or suggest that a nucleic acid from a first group (N1-n) comprise an identification section (IDS1-n), as is required by claims 1 and 27 (and new claims 31 and 32). Cantor et al. also does not teach or suggest that a second group of nucleic acids (N'1-n) comprise a detection section (IDP1-n) that is complementary to an IDS1-n sequence. These elements and the relationship such elements is not taught or suggested by Cantor et al. Furthermore, claims 2, 3, and 4, respectively, are directed toward two primer binding sections (PBS1/2) located on each side of the IDS1-n sequence; toward the IDS1-n sequence comprising 2 sections (IDS-A/B); and toward IDS-A and IDS-B sequences that are complementary. Cantor et al. makes no suggestion of these claimed elements or the claimed relationship between elements.

As submitted in the last Response, the claimed invention allows for complex labels (e.g., labels having more than one nucleic acid molecule selected from the first group) to be detected. The complexity of labels that can be achieved by using the present invention would not be feasible using the prior art methods of amplification. In view of the amendments and remarks herein, Applicants respectfully request that the rejections of claims 1-27 under 35 U.S.C. §102(b) be withdrawn.

CONCLUSION

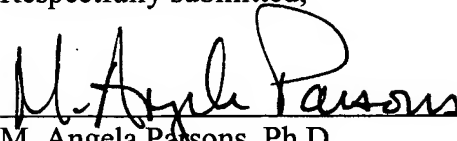
Enclosed is a \$555 check (\$395 for the RCE fee, \$100 for excess claim fees, and \$60 for the Extension of Time fee). Please apply any other charges or credits to Deposit Account No. 06-1050.

Applicant : Wolf Bertling et al.
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Respectfully submitted,

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M. Angela Parsons, Ph.D.
Reg. No. 44,282

Fish & Richardson P.C., P.A.
60 South Sixth Street
Suite 3300
Minneapolis, MN 55402
Telephone: (612) 335-5070
Facsimile: (612) 288-9696

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